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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,979	11/29/2000	Johji Mamiya	JP9-1999-0267US1(8728-457	8978

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EXAMINER	
SINGH, DALIP K	

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 02/26/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/725,979	MAMIYA ET AL.	
	Examiner	Art Unit	
	Dalip K Singh	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,13-16,20-22,25 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,13-16,20-22,25 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's amendment dated December 4, 2003 in response to PTO Office Action dated August 29, 2003. The amendments to claim(s) 1-4, 13-16, 20-22, 25 and 26 have been noted and entered in the record, and applicant's remarks have been carefully considered resulting in the action as set forth herein below.

2. PTO recognizes Nathaniel T. Wallace (Reg. No. 48,909) as an attorney/agent of record for the instant application 09/725,979.

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are, *inter alia,* such as at page 27, lines 16 has missing reference numeral. Although, the specification amendments have been noted and entered into the record but there are still inconsistencies. Appropriate correction(s) and a thorough review of the specification by applicant is required.

6. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 2 recites "...a first portion of the image is refreshed...a second portion of the image is refreshed...wherein the first portion is still" but there is nothing mentioned about the first portion being still as to when the said refreshing occurs to the first portion or the second portion of the image.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "...a first portion of the image is refreshed using image data stored in said panel memory and a second portion of the image is refreshed by the host, wherein the first portion is still..." which would mean that first portion of the image is refreshed and a second portion of the image is as well refreshed but the claim limitation recites "...wherein the first portion is **still**..." indicating no refresh can occur or at least when there is no refresh happening to the first portion. This appears to be contradictory as first portion and second portion are being refreshed while the first portion is not being refreshed.

9. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites "...said display converts said transferred image data having the first resolution to that having a second resolution higher than the first resolution...", which raises questions as to if applicant implies, for example, the first resolution could be VGA data whereas second resolution higher than the first resolution, for example, could be QSXGA. Specification of the instant application fails to describe such conversion. Specification covers data being VGA format 640 x 480 dots being sent to display which has a higher resolution i.e., 1600 x 1200 dots.

Obviously, VGA data would then occupy roughly speaking 1/16th of the area of QSXGA display as an example. If that happens to be the case, scaling can be done in both vertical and horizontal direction by interpolating using filtering techniques which are well-known in the art. This interpolation is not the same which claim 3 limitation addresses going from a lower resolution to a higher resolution, and there is no support for it in the specification. For the purposes of examination of claims as presented, it will be treated as interpolation to accomplish scaling of the image data.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claim(s) 1, 13 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,384,807 B1 to Furuhashi et al.

a. Regarding claim 1, Furuhashi et al. **discloses** a host for executing an application (...the central processing unit 2303 reads out a program stored...performs a calculation process...col. 43, line 39-41); and

a display (liquid crystal display apparatus 2302) connected to the host (central processing unit 2303), the display displaying an image (...liquid display apparatus 2302 for representation purposes...col. 43, lines 45-47), wherein said host (central processing unit 2303) transfers image data to the display when the host (central processing unit 2303) requests the display (liquid crystal display apparatus 2302) to display the image (...performs a calculation process and writes the image data...col. 43, lines 39-41), said display (liquid crystal display apparatus 2302) includes a panel control (display

controller 2306) for processing the image data, and a panel memory (display memory 2307) for storing processed image data (...writes the image data...into the display memory 2307...col. 39-44), wherein the processed image data in the panel memory (display memory 2307) is displayed based on the image data transferred from said host (central processing unit 2303) (col. 43, lines 39-50).

b. Regarding claim 13, it is similar in scope to claim 1 above and is rejected under the same rationale.

c. Regarding claim 20, it is similar in scope to claim 1 above and is rejected under the same rationale.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim(s) 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,384,807 B1 to Furuhashi et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,757,365 to Ho.

a. Regarding claim 2, Furuhashi et al. **is silent about** wherein a first portion of the image is refreshed using image data stored in said panel memory and a second portion of the image is refreshed by the host, wherein the first portion is still. Ho **discloses** a computer system comprising an information processor, a display controller, a display panel that includes a panel memory that stores data. Ho's device refreshes the display from the panel memory upon absence of update data and the central processing unit CPU 10 interfaces with the display controller (element 14) for displaying data on the

display. Although Ho is silent about portioning of the image, it does disclose self-refresh by the panel memory and also CPU directly refreshing the display and self-refresh in itself lends to image data that does not need updates from the CPU (col. 2, lines 5-57; col. 3, lines 1-3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Furuhashi with the feature "self-refresh from the display memory when there are no updates to the data while CPU refreshes data at other times to the display as image changes" as taught by Ho **because** it provides for optimum periods of decreased power operation without degradation of the display or its capability.

b. Regarding claim 15, it is similar in scope to claim 2 above and is rejected under the same rationale.

14. Claim(s) 3, 16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,384,807 B1 to Furuhashi et al. as applied to claim 1 above, and further in view of U.S. Patent No. 6,611,260 B1 to Greenberg et al.

a. Regarding claim 3, Furuhashi et al. **is silent about** said host transfers image data showing a first resolution to said display and said display converts said transferred image data from having the first resolution to that having a second resolution. Greenberg et al. **discloses** at Fig. 5 a circuit for dimensioning an image using a vertical and a horizontal image scaling circuits which could be using linear interpolation or up and down sampler along with filter for enlarging or reducing an image (col. 8, lines 35-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Furuhashi with the feature "scaling digital data of a pixilated image" as taught by Greenberg **because** it improves reliability and lowers cost.

b. Regarding claim 16, it is similar in scope to claim 3 above and is rejected under the same rationale.

c. Regarding claim 25, it is similar in scope to claim 3 above and is rejected under the same rationale.

15. Claim(s) 4,14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,384,807 B1 to Furuhashi et al. as applied to claim 1 above, and further in view of U.S. Patent No. 6,097,364 to Miyamoto et al.

a. Regarding claim 4, Furuhashi et al. **is silent about** said host compressing image data and transferring compressed image data to said display and said display decompresses said compressed image data using said panel control. Miyamoto et al. **discloses** at Fig. 5 wherein compressed data is inputted which in turn is then decompressed by an expansion unit 8 for display (col. 7, lines 18-35; Fig. 5). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Furuhashi with the feature "compressed data being decompressed on the display side" as taught by Miyamoto **because** it results in reducing the size of the display memory thereby resulting in cost-savings.

b. Regarding claim 14, Miyamoto et al. **discloses** three modes of operation performed by operation unit 20 wherein image data receiving means (frame memory 11) receives image data showing different display characteristics and data quantities (...user may select from...one of the three modes...character mode...a halftone mode...image area separation mode...col. 4, lines 40-63).

c. Regarding claim 21, Miyamoto et al. **discloses** performing different processes based on the incoming data i.e., character mode, halftone mode and image area separation mode (col. 4, lines 40-63). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Furuhashi with the feature "various data format processing (col. 4, lines 40-63)" as taught by Miyamoto et al. **because** it results in streamlined processing of image data.

16. Claim(s) 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,384,807 B1 to Furuhashi et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,784,035 to Hagiwara et al.

a. Regarding claim 26, Furuhashi et al. **is silent about** display being a multi-panel display obtained by tiling a plurality of panels or a high-resolution panel. Hagiware et al. **discloses** wherein said display is a multi-panel obtained by tiling a plurality of panels or a high-resolution panel and scaling of said image data is an enlarged display (col. 3, lines 60-67; col. 4, lines 1-11). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Furuhashi et al. with the feature "tiled plurality of panels" as taught by Hagiware et al. **because** with tiling the work load for processing is distributed in parallel thus improving processing performance.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art teach image display system with plurality of display screens, resolution conversion, parallel processing, display memory.

U.S. Patent No. 6,266,042 B1 to Aratani U.S. Patent No. 5,923,339 to Date et al.

U.S. Patent No. 6,545,683 to Williams U.S. Patent No. 6,486,865 B1 to Ishiyama

U.S. Patent No. 6,222,886 B1 to Yogeshwar U.S. Patent No. 6,064,771 to Migdal et al.

U.S. Patent No. 5,406,306 to Siann et al.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Dalip K. Singh** whose telephone number is **(703) 305-3895**. The examiner can normally be reached on Mon-Thu (8:00AM-6: 30PM) Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Matthew Bella**, can be reached at **(703) 308-6829**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dks

February 19, 2004

Matthew C. Bella

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600